# FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

**August 25 to September 7, 2013 (Weeks 35 & 36)**

## Overall Summary

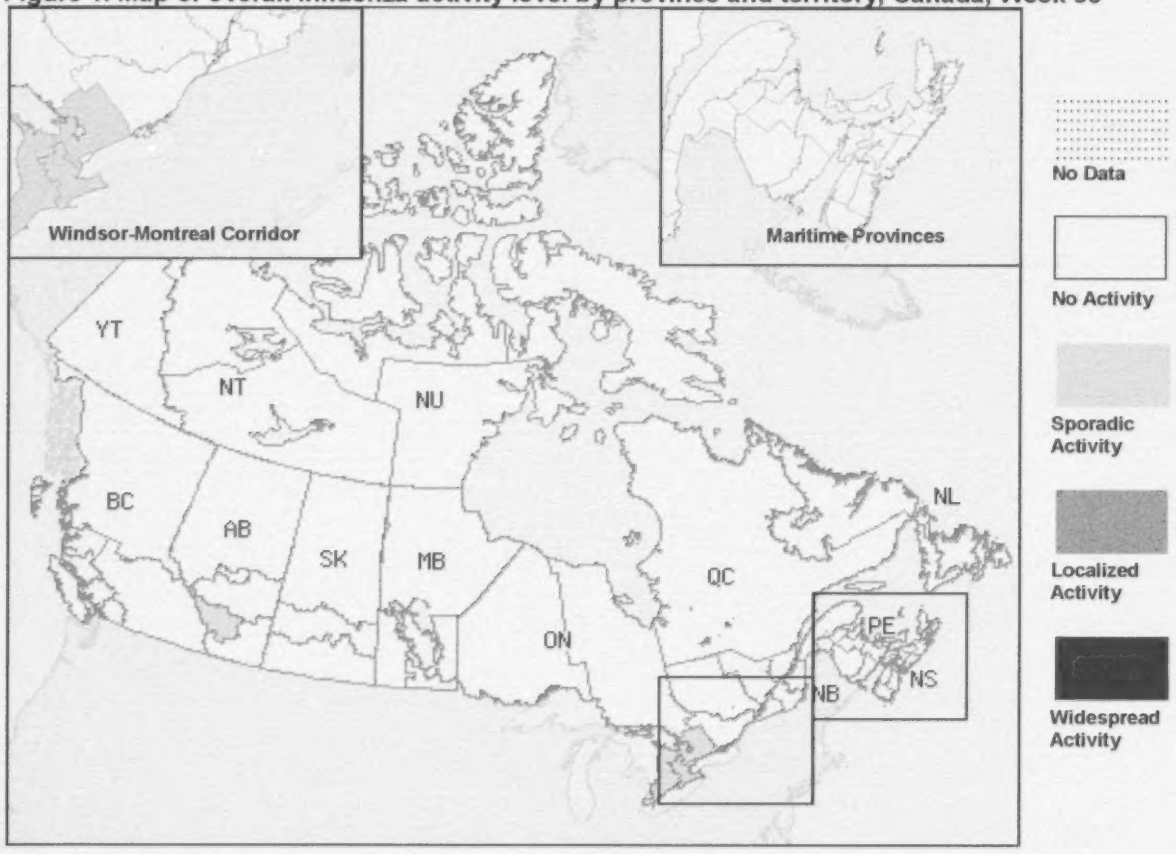
- Influenza activity in Canada remained at inter-seasonal levels during this 2-week period.
- The number of laboratory tests positive for all respiratory viruses was similar to previous weeks.
- The ILI consultation rate was stable in recent weeks.

NOTE: This is the first report for the 2013-2014 influenza season. Fortnightly reports will continue until October 11, 2013. Laboratory detections reported through the Respiratory Virus Detection Surveillance System and influenza activity level maps continue to be updated weekly on the FluWatch website.

## Influenza Activity (geographic spread) and Outbreaks

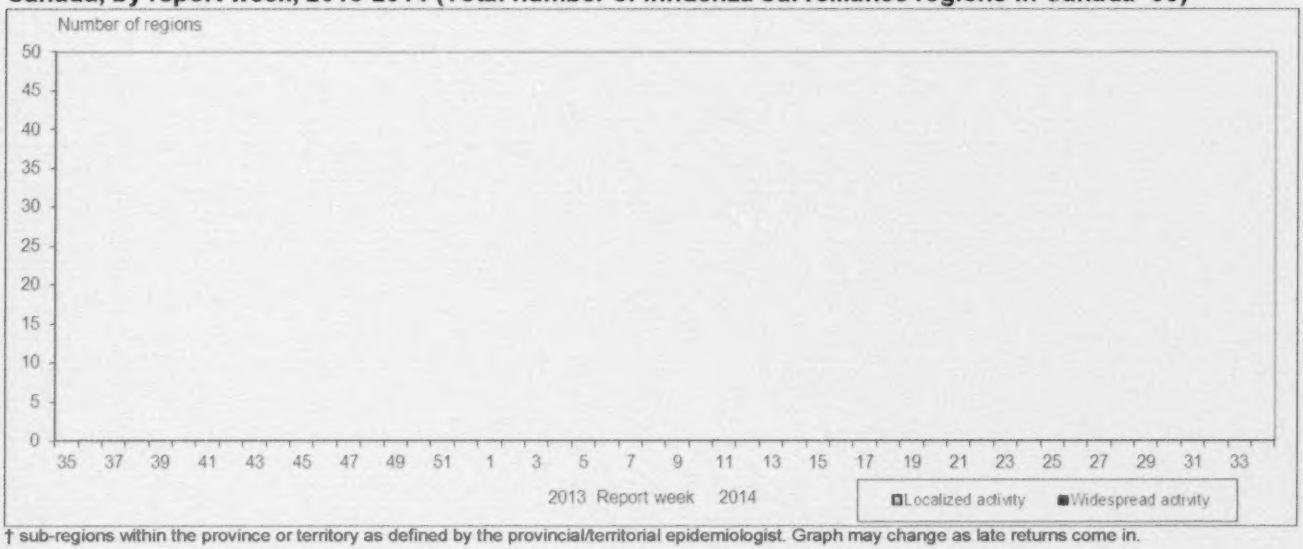
The number of regions reporting influenza activity was at inter-seasonal levels in weeks 35 and 36. During this period, six regions reported sporadic activity (Figure 1). Localized activity has not been reported since week 26 of the 2012-13 season (Figure 2). No new influenza outbreaks were reported in weeks 35 or 36 (Figure 3).

**Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 36**



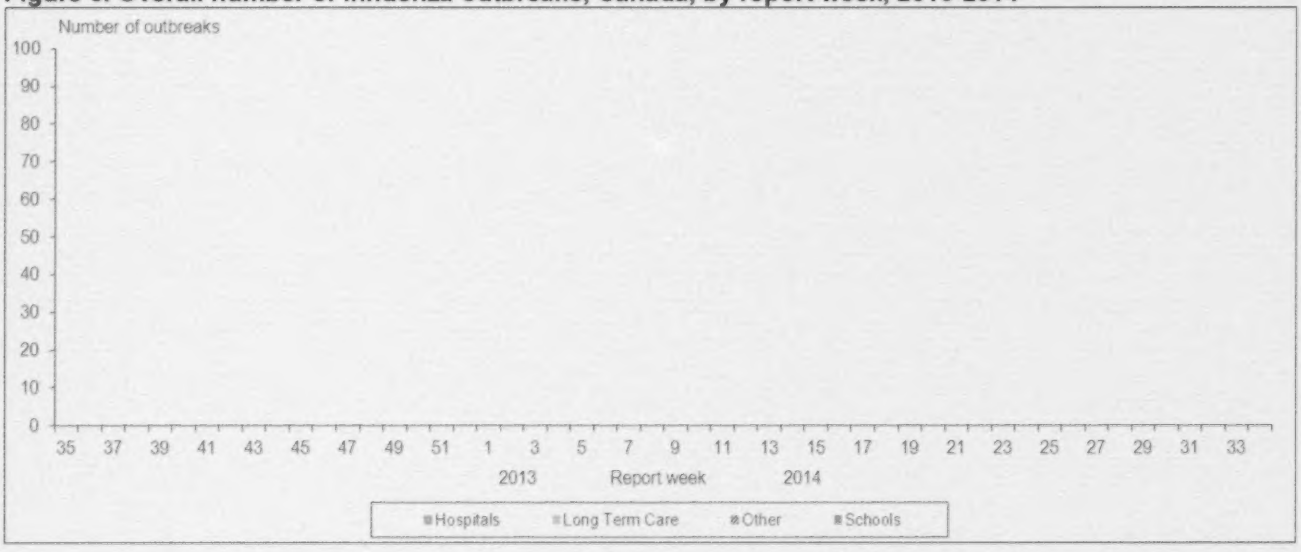

Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

**Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2013-2014 (Total number of influenza surveillance regions in Canada=58)**




† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2013-2014**




## Influenza and Other Respiratory Virus Detections

The overall percentage of positive influenza tests was low and stable, at 0.6% in week 35 and 0.3% in week 36. Among the ten influenza viruses detected in weeks 35 and 36, eight were influenza A (Table 1). Detailed information on age and type/subtype was complete for eight cases. Five of the eight cases were adults 45-64 years of age with A(H1N1)pdm09 (Table 2).

The percentage of positive tests for rhinovirus increased during this 2-week period from 17.7% in week 34 to 23.1% in week 36; although the number of positive tests was similar to previous weeks. The percentages of positive tests for other respiratory viruses were low in week 36: parainfluenza (3.1%), human metapneumovirus (hMPV) (0.1%), respiratory syncytial virus (RSV) (0.8%), coronavirus (0%) and adenovirus (1.7%) (Figure 5)*.

* For more details, see the weekly Respiratory Virus Detections in Canada Report.

**Table 1. Weekly and Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2013-2014**

| Reporting provinces | Weekly (August 25 to September 7, 2013) | | | | | | Cumulative (August 25 to September 7, 2013) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Influenza A | | | | | B | Influenza A | | | | | B |
| | A Total | A(H1) | A(H3) | Pand H1N1 | A (UnS)* | Total | A Total | A(H1) | A(H3) | Pand H1N1 | A (UnS)* | Total |
| BC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| AB | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 |
| SK | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| MB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ON | 3 | 0 | 1 | 1 | 1 | 1 | 3 | 0 | 1 | 1 | 1 | 1 |
| QC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Canada | 8 | 0 | 1 | 5 | 2 | 2 | 8 | 0 | 1 | 5 | 2 | 2 |

*Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

**Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2013-2014***

| Age groups | Weekly (Aug. 25 to Sept. 7, 2013) | | | | | Cumulative (Aug. 25, 2013 to Sept. 7, 2013) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Influenza A | | | | B | Influenza A | | | | B |
| | A Total | Pandemic H1N1 | A/H3N2 | A unsubtyped | Total | A Total | Pandemic H1N1 | A/H3N2 | A unsubtyped | Total |
| <5 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 |
| 5-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45-64 | 5 | 5 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 |
| 65+ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 7 | 5 | 1 | 1 | 1 | 7 | 5 | 1 | 1 | 1 |

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

**Figure 4. Influenza tests reported and percentage of tests positive by report week, Canada, 2013-14**

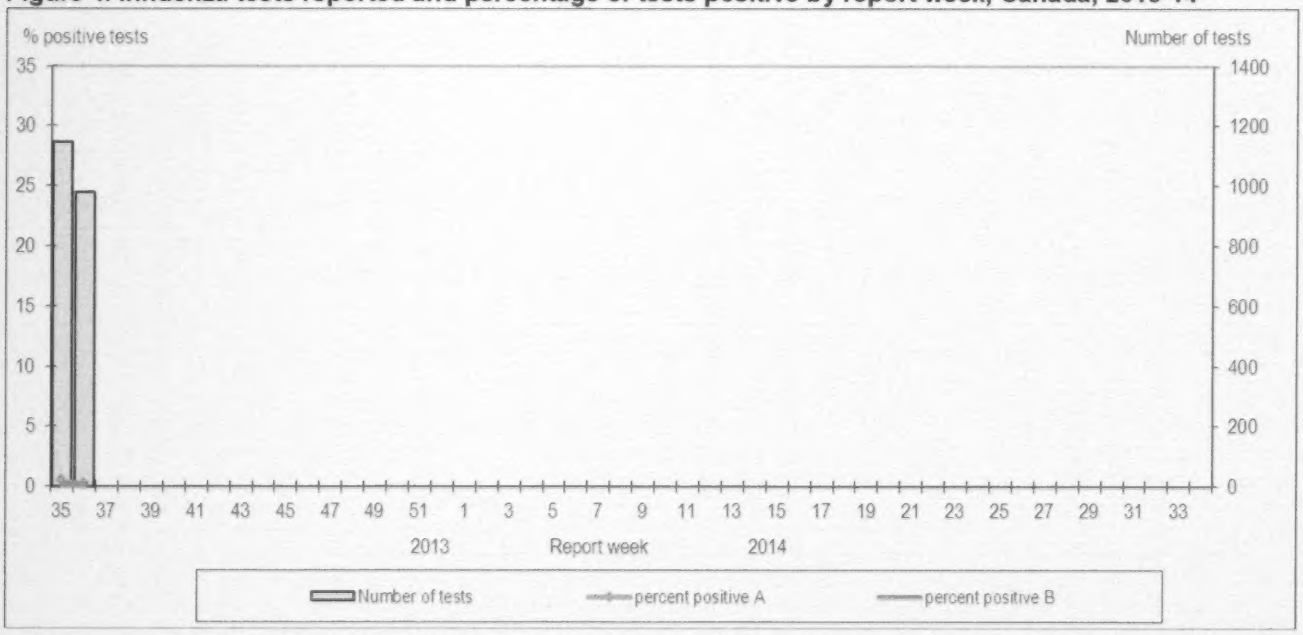
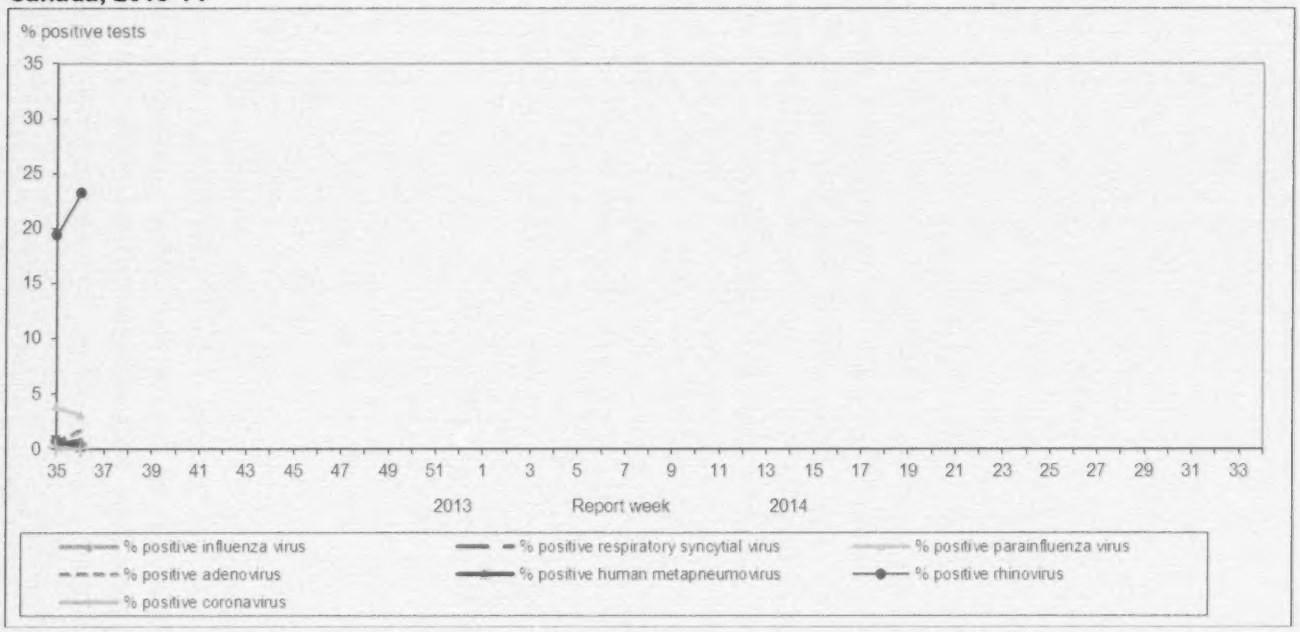


**Figure 5. Percent positive influenza tests compared to other respiratory viruses, by reporting week Canada, 2013-14**




## Influenza Strain Characterizations

The National Microbiology Laboratory (NML) has not yet conducted antigenic characterization of influenza viruses in the 2013-14 season.

**Figure 6. Influenza strain characterizations, Canada, 2013-2014, N = 0**

Note: The WHO recommended components for the 2013-2014 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009 (H1N1)pdm09-like virus, an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011b, and a B/Massachusetts/2/2012-like virus.

## Antiviral Resistance

The NML has not yet conducted antiviral resistance testing of influenza viruses in the 2013-14 season.

**Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2013-2014**

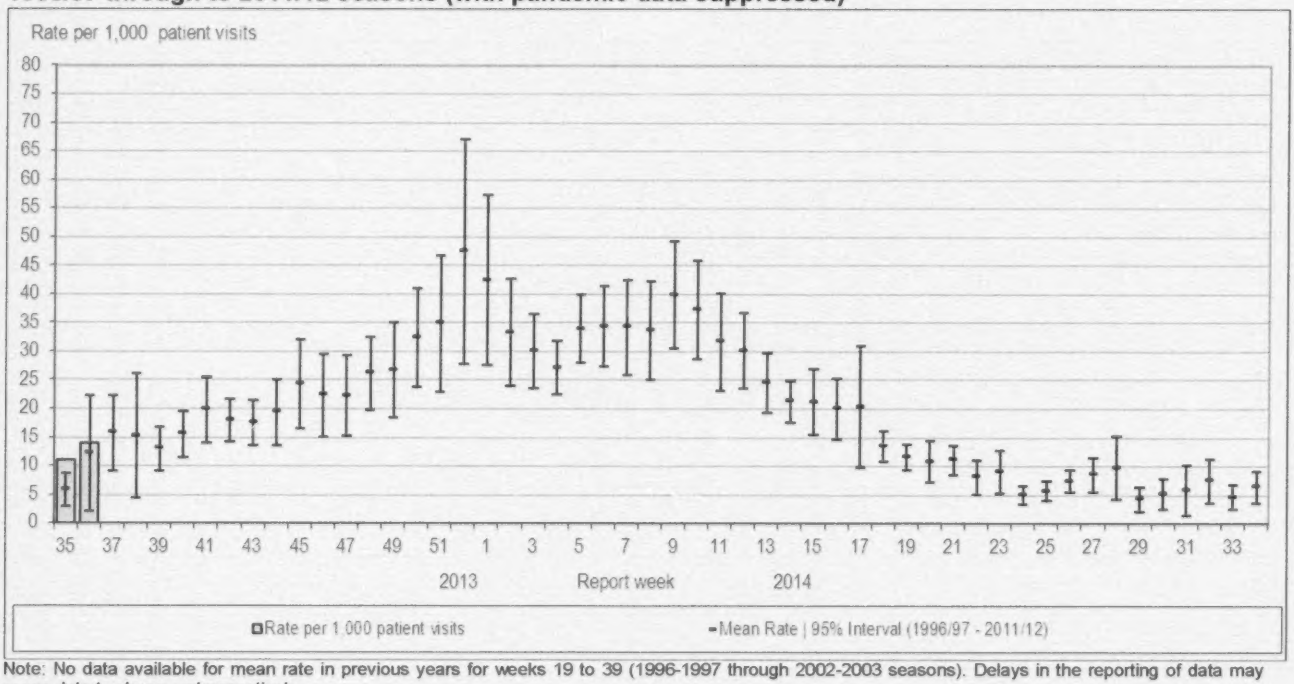
| Virus type and subtype | Oseltamivir | | Zanamivir | | Amantadine | |
|---|---|---|---|---|---|---|
| | # tested | # resistant (%) | # tested | # resistant (%) | # tested | # resistant (%) |
| A (H3N2) | 0 | 0 | 0 | 0 | 0 | 0 |
| A (H1N1) | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 | NA* | NA* |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 |

* NA – not applicable

## Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate was similar over the past seven weeks; and was 11.1/1,000 in week 35 and 13.9/1,000 in week 36 (Figure 7). The highest consultation rate was observed in adults ≥65 years of age (23.4/1,000 visits) in week 35 and in children 5-19 years of age in week 36 (38.7/1,000 visits).

**Figure 7. Influenza-like illness (ILI) consultation rates by report week, Canada, 2013-14, compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)**




Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

## Severe Respiratory Illness Surveillance

**Paediatric Influenza Hospitalizations and Deaths (IMPACT)**
No laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported in any of the 12 hospitals participating in the Immunization Monitoring Program Active (IMPACT) network in weeks 35 or 36.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

**Adult Influenza Hospitalizations and Deaths (PCIRN)**
Active surveillance of laboratory-confirmed influenza-associated adult (≥16 years of age) hospitalizations reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network concluded for the 2012-13 influenza season on April 30th, 2013. The PCIRN-SOS network continues to report limited data on laboratory-confirmed cases of influenza identified through passive surveillance at 15 out of 17 hospital sites, and active surveillance will start again on November 15th, 2013. No new hospitalizations, ICU admissions or deaths were reported in weeks 35 and 36.

Note: The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

**Provincial/Territorial Influenza Hospitalizations and Deaths (Aggregate Surveillance System)**
In the first two weeks of the 2013-14 season, two laboratory-confirmed influenza-associated hospitalizations were reported from five of the nine participating provinces and territories*. Both cases were adults 45-64 years of age with A(H1N1)pdm09, of which one was admitted to the ICU.

Note*: The number of new influenza-associated hospitalizations and deaths reported by the Aggregate Surveillance System each week may be overestimated, as it may include retrospective updates to data from Ontario for previous weeks. These data may also include cases reported by the IMPACT and PCIRN networks. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not reported in Ontario.

## International Influenza Updates

### Northern Hemisphere
Influenza activity in temperate regions of the northern hemisphere was at inter-seasonal levels in weeks 34 to 35. However, the US CDC reported an increase in influenza A detections in weeks 35 and 36.
*World Health Organization influenza update* ***(#193)***
*Centers for Disease Control and Prevention seasonal influenza report* ***(wk36)***
*EuroFlu weekly electronic bulletin* ***(wk34)***

### Tropical Regions
**Asia & Africa**: Influenza activity remained low in most countries in tropical Asia. Hong Kong, China Special Administrative Region, reported a switch from A(H1N1)pdm09 circulation to predominantly A(H3N2). Countries in Southeast Asia reported decreasing circulation of influenza A. Most countries in central Africa reported low or decreasing influenza activity, although Côte d'Ivoire and Ghana reported continued influenza circulation.

**Carribean, Central America & tropical South America:** Influenza activity in Caribbean and Central America continued to decrease, with influenza A(H3N2) and A(H1N1)pdm09 co-circulating in varying proportions in different countries. In tropical South America, influenza activity decreased in Bolivia, Brazil, Colombia and Venezuela. Peru reported a sharp increase in A(H1N1)pdm09 circulation in weeks 29-32, but detections have been decreasing in weeks 33 and 34. In Bolivia, the proportion of SARI hospitalizations showed an increasing trend, primarily associated with A(H1N1)pdm09.
*World Health Organization influenza update* ***(#193)***
*PAHO Influenza Situation Report* ***(wk34)***

### Southern Hemisphere
Influenza activity continued to decline in countries in South America as well as in South Africa. Activity in Oceania has been increasing in recent weeks and may be reaching its plateau.

**South America – Southern Cone:** Influenza and RSV circulation declined in several countries in temperate South America, although RSV continued to be the predominant respiratory virus in the region. Influenza detections peaked at the end of June, with a predominance of A(H1N1)pdm09 in all countries except Paraguay, where A(H3N2) was predominant. In Argentina, laboratory detections seem to have peaked in week 27, and the number of ILI reports declined and was within the expected range in week 34. In Chile, the ILI activity rate in week 34 was similar to previous weeks; RSV and influenza detections declined from weeks 29-33 but rose slightly in week 34. In Paraguay,

ILI activity increased in week 34 although influenza A(H3N2) and RSV detections have been declining in weeks 28-34. In Brazil, influenza detections have been declining since a peak in week 24, with A(H1N1)pdm09 and influenza B co-circulating.

**South Africa:** Circulation of A(H1N1)pdm09 was reported from April to July 2013, with a peak in laboratory detections in week 23. Influenza circulation in weeks 31-34 has shifted to a predominance of A(H3N2) and influenza B, observed among both ILI and SARI cases.
*South Africa Influenza surveillance report* ***(wk34)***

**Australia & New Zealand:** Compared to recent years, the start of the 2013 influenza season has been delayed in Australia and New Zealand. In New Zealand, consultation rates for ILI remained below the baseline level, and below the level of the previous two seasons. Laboratory detections of influenza increased in week 35 but declined in week 36. Among the 1183 influenza viruses identified between weeks 1 and 36, 47.2% were influenza B. Among the 405 subtyped influenza A viruses, 75.6% were A(H3N2). In Australia, the increase in influenza activity has slowed and activity remains lower than the previous 2 seasons. The ILI consultation rate increased in recent weeks, but declined in week 35; 25% of sentinel ILI specimens were positive for influenza between August 26 and September 1. The number of laboratory-confirmed influenza notifications continued to increase since early June. Among the 14,068 influenza viruses identified between 1 January and 30 August 2013, 65% were influenza A. Although the majority of influenza A have not been subtyped, to date approximately 15% have been A(H1N1)pdm09 in 2013 compared to <1% during the 2012 season. Most influenza B viruses characterized were from the Yamagata lineage.
*New Zealand Public Health Surveillance* ***(wk36)***
*Australia Influenza Report* ***(#06)***

*World Health Organization influenza update*
*PAHO Influenza Situation Report*
*WHO FluNet*

## Emerging Respiratory Pathogens

**Human Avian Influenza**
Influenza A(H7N9): No new cases of human infection with avian influenza A(H7N9) have been reported by the World Health Organization (WHO) since 11 August 2013.
*PHAC – Avian influenza A(H7N9)*
*WHO – Avian Influenza A(H7N9)*

**Human Swine Influenza**
Influenza A(H3N2)v: One new case of human infection with variant influenza A(H3N2)v was reported from Michigan, USA, in week 35. No cases were reported in week 36. To date in 2013, a total of 18 A(H3N2)v cases have been reported, and one person has been hospitalized.
*Centers for Disease Control and Prevention Influenza A(H3N2) Variant Virus*

**Middle East Respiratory Syndrome Coronavirus (MERS-CoV)**
Since 30 August 2013, WHO has reported ten additional cases of MERS-CoV infection: eight cases, including three deaths, in Saudi Arabia; one case in Qatar who subsequently died; and one case in Tunisia (reported on 22 May 2013 as a deceased probable case, now confirmed). Four of the cases in Saudi Arabia are family contacts of at least one confirmed case. Two are asymptomatic paediatric cases. The remaining two are adults with underlying medical conditions, and one has died. Two healthcare workers with severe pneumonia were reported from the same health care facility. One had no known exposure to animals, or to a confirmed MERS-CoV case, and has died. The second health care worker was reported to be in critical condition. As of 12 September, 2013, 114 laboratory-confirmed cases of human infection with MERS-CoV have been reported, including 54 deaths. Most patients are male (61%; 67 of 110 cases) and range in age from 14 months to 94 years (median 50 years, n=107).
*PHAC – Middle East respiratory syndrome coronavirus (MERS-CoV)*
*WHO – Coronavirus infections*

**FluWatch reports include data and information from the following sources:** laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

**ILI definition for the 2013-2014 season**

**ILI in the general population:** Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

**Definitions of ILI/Influenza outbreaks for the 2013-2014 season**

**Schools:** Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

**Hospitals and residential institutions:** two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

**Workplace:** Greater than 10% absenteeism on any day which is most likely due to ILI.

**Other settings:** two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

**Influenza Activity Levels Definition for the 2013-2014 season**

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

*We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.*

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles.